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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,796

06/14/2006

Alfredo De Rossi

4590-541

7169

33308

7590

06/12/2009

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EXAMINER

SOHN, SEUNG C

ART UNIT

PAPER NUMBER

2878

MAIL DATE

DELIVERY MODE

06/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,796	Applicant(s) DE ROSSI ET AL.	
	Examiner SEUNG C. SOHN	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 18-35 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18, 19, 27 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 20-26, 28-30, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/14/2006; 4/15/2009</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed April 15, 2009 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. Claims 25 and 35 are objected to because of the following informalities: On claims 25 and 35, "in one of claim" should be changed to – in claim --. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. ***Claims 18-19, 27 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Duboz et al. (Patent No. US 5,677,544).***

Regarding claim 18, Duboz et al. shows in Fig. 1 a photodetector comprising: an active zone (2) for detecting optical radiation and a structure arranged on said active zone, intended for optically coupling the optical radiation, said structure combining the properties of coupling gratings and Bragg gratings and having a defect which, from an incident wave, makes it possible to obtain a plasmon wave which is both coupled and localized in the active zone, said active zone having dimensions which are small compared to those of said structure (Col. 2, lines 52-63).

Regarding claim 19, Duboz et al. shows in Fig. 1 that said active zone (2) has an elongate shape and said structure is composed of grooves which are mutually parallel and parallel to the length of the active zone.

Regarding claim 27, Duboz et al. shows in Fig. 1 that said two-dimensional structure is composed of patterns with substantially identical dimensions, in that the active zone (2) is centered on said structure and in that the dimensions of the active zone are substantially equal to the average dimensions of the patterns.

Regarding claim 31, Duboz et al. shows in Fig. 1 that the dimensions of the patterns of the structure are approximately equal to half the average wavelength of the incident radiation divided by the average optical index of the structure.

Regarding claim 32, Duboz et al. shows in Fig. 1 that the active zone (2) is surrounded by an optically passive zone with dimensions substantially equal to those of the structure.

Regarding claim 33, Duboz et al. shows in Fig. 1 that the active zone (2) is a quantum well structure.

Allowable Subject Matter

5. Claims 20-26, 28-30 and 34-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 20-26, 28-30 and 34-35 are allowable because the prior art fails to disclose or make obvious, either singly or in combination, comprising, in addition to the other recited features of the claim, "the optical thickness of said layer separating the lower face from the upper face along an axis perpendicular to the direction of the grooves and parallel to the plane of the lower face varies as the superposition of a coupling grating whose pitch has a first spatial frequency and a second grating whose pitch has a second spatial frequency that is two times the first spatial frequency and which has a central spatial defect."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEUNG C. SOHN whose telephone number is (571)272-4123. The examiner can normally be reached on Mon-Thur, 7:30 AM -6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GEORGIA Y. EPPS can be reached on 571-272-2328. The fax phone

Art Unit: 2878

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SEUNG C SOHN/
Primary Examiner, Art Unit 2878